

San Diego Bay

Quick Facts

- Bay Cities: San Diego, Coronado, National City, Chula Vista, and Imperial Beach;
- Subtidal and Intertidal areas: 11,130 acres
- Salt ponds: 1,400 acres.
- Watershed: Cities of San Diego, Coronado, National City, Chula Vista, Imperial Beach, La Mesa, Lemon Grove, and El Cajon, and County of San Diego
- 415 square miles.
- The Sweetwater and Otay rivers and Chollas and Paradise creeks are the main tributary streams.

History

In 1769 the Spanish chose San Diego Bay as the site of their first northern colony to make use of this fine natural harbor. These first explorers saw a very different landscape than exists today. Gray whales used the bay as a calving ground. Native Americans lived along the shoreline, harvesting fish and shellfish from the productive shallow waters.

The earliest maps of the bay show a nearly solid border of mudflats around the shoreline. Marshes filled the mouths of the Sweetwater, Otay, and San Diego rivers as well as Paradise and Chollas creeks. The bay was relatively shallow, contained large wetland areas, and received a great deal of fresh water.

Americans first came to San Diego Bay to trade with the Spanish and to hunt the whales and later to settle in the area. By 1830, sixteen American whaling ships were operating in the bay. This industry peaked in 1871 with the near extinction of the gray whale. Seven years after California became a state in 1850, the Army Corps of Engineers diverted the San Diego River away from the bay into False (Mission) Bay because the river kept silting in San Diego harbor and interfering with shipping. The large marshy river delta was then filled and developed into the City of San Diego.

Major maritime development of the bay extended from the late 1800s to well past World War II. During this period, 100 million to 140 million cubic yards of bay sediment were dredged and used to fill tidelands and widen the beaches along the Silver Strand. Piers and port facilities were created for both domestic and military uses. In 1962, the San Diego Unified Port District was created, consolidating the port facilities of five shoreline cities. Naval facilities in the bay are home base to nearly 20 percent of the Navy's active fleet. Other military uses include an amphibious and underwater demolition training base and a Marine Corps recruit base.

The development of San Diego Bay into a major military and domestic port has been accomplished through the destruction of most of its wetlands. The bay is now much deeper and narrower than it was 150 years ago, and most shoreline development sits on

fill. Only the south bay contains significant areas of marsh, mudflat, and salt ponds. Overall, 27 percent of the bay's tidal area has been filled.

In 1888 a dam was built on the Sweetwater River to provide drinking and irrigation water. The Otay River also was dammed in 1919. As a result, freshwater inflows have been reduced to 75 percent of their historic levels, and the bay is now primarily a saline system.

Land Ownership

The San Diego Unified Port District administers 37 percent of both the submerged and the historic tidelands (both filled and remaining natural wetlands) of San Diego Bay under a grant from the California Legislature. The State Lands Commission retains ownership of 42 percent of the bay, mostly underwater areas. The military controls almost 20 percent, and city and county governments have jurisdiction over less than 1 percent of the bay. The salt ponds in the south bay are now part of the South San Diego Bay National Wildlife Refuge and are operated under a lease. As a result of a lawsuit in 1988, the Fish and Wildlife Service received ownership of the entire Sweetwater and Paradise Marsh complex, a 316-acre refuge.

Wildlife Values

Several types of habitat in San Diego Bay are important to wildlife—open water, mudflat, marsh, and salt evaporation ponds.

Open water covers 10,165 acres of the bay below the low-tide line. Deep and shallow subtidal habitats and eelgrass beds predominate. The north and central bay areas have been dredged for ship channels and port facilities and have depths varying from 18 to 70 feet. Shallow subtidal habitat ranges from the low-tide line to 18 feet deep and is concentrated in the southern bay and a few other shoreline locations. Eelgrass beds cover about 800 acres throughout the bay.

Many types of fish and invertebrates inhabit the deep and shallow subtidal areas. Surveys have found 80 to 90 fish species in the bay. Generally, the deeper northern bay supports open-ocean fish, while the warmer, shallower south bay supports smaller estuarine fish.

Eelgrass beds are a productive refuge for juvenile fishes and crustaceans. Studies of San Diego Bay found that more species of fish use eelgrass than the other subtidal habitats. Certain species, such as topsmelt and shiner surfperch, use eelgrass beds to spawn. Their offspring remain in the productive, protected eelgrass until they are large enough to enter the open ocean. Recreational and commercial fish as well as small forage fish live in the eelgrass beds.

Diving ducks, primarily surf scoter and scaup, congregate on the open waters of the bay during the winter. These species have declined by 90 percent since the late 1960s. The suspected cause of this precipitous decline is the enormous increase in boat traffic in this same period. During the 1880s great concentrations of waterfowl used the intertidal areas of the northern bay. One observer counted 50,000 Brant on a single day in Spanish

Bight, an inlet that once existed on North Island. After the filling of much of the bay only about 500 Brant winter here now.

The mudflats of south San Diego Bay are the largest shorebird feeding area in San Diego County and are a significant stopover for shorebirds of the Pacific Flyway. Only half of the mudflat habitat that existed in 1850 in the bay remains, a total of 766 acres. In winter months, feeding shorebirds and other water birds crowd onto these mudflats.

The salt ponds of the south bay provide additional feeding habitat for shorebirds and roosting and nesting areas for many species. Salt production creates water-filled hypersaline ponds, which are inhabited by tiny brine shrimp. Northern phalaropes, eared grebes, and other birds feed in these ponds. The drawdown and drying of the salt ponds create a mudflat-like feeding ground for numerous shorebirds. Waterfowl and many other water birds rest on the water that remains calm during high tides and storms. The levees surrounding the ponds, which are isolated and typically barren of vegetation, serve as nesting grounds for five species of terns, including least terns, as well as black skimmer and snowy plover.

Of the marshes that once bordered San Diego Bay, only 10 percent remain. This remnant consists of 203 acres, primarily at the Sweetwater and Paradise Marsh complex. Resident birds include savannah sparrow and clapper rail. Least terns nest on a large fill within the marsh complex.

Problems

Current resource problems in San Diego Bay fall into several categories—water quality issues, proposed dredge-and-fill projects in wetlands, and a proposed southern bay entrance.

During the 1940s and '50s the bay was described as a "metropolitan cesspool." Fifteen sewers discharged raw or minimally treated sewage directly into the bay. The water was a murky green-brown almost devoid of aquatic life. An ocean outfall was constructed at Point Loma in 1963 at the insistence of the Regional Water Quality Board. Long-term studies of the bay's fish and invertebrates have shown that those species that died from the pollution of the 1950s began to return in the 1970s.

Current water quality problems are less obvious and center on high levels of certain toxins in bay sediments. PCBs occur in several locations, most notably in Convair Lagoon, where contaminated shellfish are quarantined. Copper in the mud at the 24th Street Marine Terminal copper ore loading facility exceeds safe levels and must be cleaned up. Both copper and tributyltin leach from antifouling paint on boat hulls, and mud near shipyards contains large amounts of paint chips and toxins. These compounds kill shellfish. Storm drains bring oil and grease washed off sidewalks and roads into the bay, causing fin rot in fish. As the bay watershed is developed, the concentrations of these compounds could greatly increase. The Regional Water Quality Control Board has initiated the San Diego Bay Clean Up Project, which is sampling toxin areas, identifying their sources, and regulating toxic discharges.

The demand for private, recreational marinas in San Diego Bay is very high. Several marinas that would affect wetlands have been proposed. One would be constructed in National City, near 32nd Street, and another in Imperial Beach, along the Otay River. Both could have detrimental effects on wetlands.

A second entrance to San Diego Bay has been proposed for many years. It would be constructed through the Silver Strand at Crown Cove. Because of the length of the bay, boat travel from marinas in Chula Vista or Coronado Cays to the open ocean is considered to be too long. A second entrance would make the south bay more accessible to recreational boats. The effects of such a second entrance on the south bay wetland habitats would be damaging, however. The shallowness of the south bay and its broad mudflats attract thousands of birds and support many fish. Increasing tidal circulation and deepening of this area would decrease the size and quality of the habitat. As of 1989 this proposal was being studied by a coalition of several south bay cities and remained very controversial.

The riparian forest of the Sweetwater River supports endangered Least Bell's vireos. The largest congregations of this species occur around the southeastern Sweetwater Reservoir and upstream to Jamacha Valley. A number of developments could affect this area, including sand mining, highway expansion, increased water storage, and housing developments. The San Diego Association of Governments released a habitat conservation plan for the river in 1988. Numerous development proposals along the riparian floodplain of the Otay River have been made. The Conservancy and local governments began an enhancement plan for the lower river floodplain in 1989.

Public Access

Numerous points on the bay shoreline are accessible to the public. Contact the Port of San Diego at (619) 291-3900 for information. The City of Chula Vista operates the Chula Vista Nature Center. The Center is open from 10 a.m. to 5 p.m., Tuesday through Sunday, and is accessible only by shuttle bus. The bus leaves from the parking lot located at I-5 and E Street in Chula Vista, every 15 minutes. The Center offers numerous special programs including bird and nature walks. Contact: 1000 Gunpowder Point Dr., Chula Vista, CA 91910. (619) 409-5903